

CLAIMS

1. A method for inputting a request to a hand-held device, transmitting a server request corresponding to the input request from the hand-held device to a server computer through a telecommunications link, receiving a response to the server request by the hand-held device from the server computer, and outputting the response by the hand-held device, the handheld device having:

a number of input components for inputting request data from a number of different input media, including mechanical manipulation of an input component and at least one of additional input media including electronic, auto tones, magnetic, and printed request data,

a processing component that constructs a request from the request data,

a transceiver component that sends the request to the server computer and receives the response from the server computer, and

a number of output components that output a portion of the response received from the server computer in a particular response output medium,

the method comprising:

coupling the hand-held device to a telecommunications link to transmit the request and to receive the response through the telecommunications link;

inputting the request from an input medium to an input component of the hand-held device;

processing the input request to produce a corresponding server request;

transmitting the server request to the server computer;

receiving the response from the server computer through the telecommunications link; and

outputting the response via an output component.

2. The method of claim 1 wherein the input media is one of:

audio tones,

keypad input, and

extracting data encoded in one of

a mechanical medium,

a magnetic medium,
an electronic medium, and
a printed medium.

- 5 3. The method of claim 1 wherein the input media is a combination of two or more of
input media selected from:

audio tones,
keypad input, and
extracting data encoded in one of

- 10 a mechanical medium,
a magnetic medium,
an electronic medium, and
a printed medium.

- 15 4. The method of claim 1 wherein the telecommunications link is one of:

a standard telephone line;
a cellular telephone;
a PBX telephone line;
a wireless telephone;
20 a personal communication system telephone;
a radio frequency connection;
a cordless telephone; and
an RS232 or universal serial bus to a computer that is, in turn, coupled to a remote
server computer via a telecommunications link.

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5. The method of claim 1 wherein the input request includes an access code.

6. The method of claim 5 wherein the access code is one of:

an IP address;
30 a URL;
a web site address;

a product/service ID code; and
a phone number.

7. The method of claim 1 further including storing the input request in non-volatile
5 memory for communication via telecommunication link at a later time or date.

8. The method of claim 7 further including:
transmitting a request, previously stored in non-volatile memory, via a
telecommunication link to a server.

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9. The method of claim 1 wherein the hand-held device includes a smart card reader
input component
for inputting information encoded electronically in a smart card.

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10. The method of claim 1 wherein the hand-held device includes a magnetic card reader
input component
for inputting information encoded magnetically on a magnetic card.

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11. The method of claim 1 wherein the hand-held device includes a bar code reader input
component for inputting information stored in a printed bar code.

12. The method of claim 11
wherein the bar code reader comprises

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a bank of illumination elements for illuminating a printed bar code,
an optical element for gathering light reflected from the printed bar code,
a charge coupled device for sensing bar codes from the gathered light, and
a low-power proximity detector; and

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wherein, when activated, the bar code reader activates the low-power proximity
detector to first detect a reflective surface within a threshold distance from the optical element
prior to activating the illumination elements to read a bar code.

13. The method of claim 11 wherein the bar code reader comprises a laser bar code reader.

14. The method of claim 11 wherein the bar code reader comprises a LED bar code reader.

15. The method of claim 11 wherein the bar code reader comprises a CCD bar code reader.

16. The method of claim 1 wherein the hand-held device includes a telephone for person-to-person communication or person-to-computer computer server communication.

17. The method of claim 1 wherein the hand-held device includes a speaker output component for outputting audio information.

18. The method of claim 1 wherein the hand-held device includes a microphone input component for inputting an input request represented by audio tones.

19. The method of claim 1 wherein the hand-held device includes a keypad input component for inputting an input request represented by mechanical manipulation of the keypad.

20. The method of claim 1 wherein the hand-held device includes a visual display output component capable of displaying alphanumeric symbols.

21. The method of claim 1 wherein the hand-held device includes a visual display output component capable of displaying both alphanumeric symbols and graphical images.

22. The method of claim 1 wherein the hand-held device includes a printer output component.

23. The method of claim 1 wherein the hand-held device includes an input or output component comprising a serial interface element such as RS232.

24. A method for electronically processing an access code included in an input medium,
5 the method comprising:

inputting the access code to a hand-held device from the input medium;

processing the access code to produce a corresponding server access request;

coupling the hand-held device to a telecommunications link to transmit the access
request to a server computer and to receive a response from the server computer through the
10 telecommunications link;

transmitting the access request to the server computer;

receiving a response that is one or more from among audio, alpha-numeric, and
images, from the server computer through the telecommunications link; and

outputting the response via an output component of the hand-held device,

15 the handheld device comprising: a number of input components for inputting request data
from a number of different input media, including mechanical manipulation of an input
component and additional input media including electronic, auto tones, magnetic, and printed
request data;

a processing component that constructs a request from the request data;

20 a transceiver component that sends the request to the server computer and receives the
response from the server computer; and

a number of output components that output a portion of the response received from
the server computer in a particular response output medium,

25 25. The method of claim 24 wherein the input media is one of:

audio tones,

keypad input, and

data encoded in one of

a mechanical medium,

30 a magnetic medium,

an electronic medium, and

a printed medium.

26. The method of claim 24 wherein the input media is a combination of two or more of input media selected from:

- 5 audio tones;
- keypad input, and
- data encoded in one of
 - a mechanical medium,
 - a magnetic medium,
 - 10 an electronic medium,
 - a serial interface, and
 - a printed medium.

27. The method of claim 24 wherein the telecommunications link is one of:

- 15 a standard telephone line;
- a cellular telephone;
- a PBX telephone line;
- a wireless telephone;
- a personal communication system telephone;
- 20 a radio frequency connection;
- a cordless telephone; and
- an RS232 or universal serial bus to a computer that is, in turn, coupled to a remote server computer via a telecommunications link.

28. The method of claim 24 wherein the access code is one or more of:

- 25 an IP address;
- a URL;
- a web site address;
- a product/service ID code; and
- 30 a telephone number;

29. The method of claim 24 further including storing the input request in non-volatile memory for communication via telecommunication link at a later time or date.

30. The method of claim 24 further including:

5 transmitting an access request, previously stored in non-volatile memory, via a telecommunication link to a server.

31. The method of claim 24 wherein the hand-held device includes a smart card reader input component for inputting access information encoded electronically in a smart card.

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32. The method of claim 24 wherein the hand-held device includes a magnetic card reader input component for inputting access information encoded magnetically on a magnetic card.

33. The method of claim 24 wherein the hand-held device includes a bar code reader input
15 component for inputting access information stored in a printed bar code.

34. The method of claim 24
wherein the input component comprises

20 a bank of illumination elements for illuminating a printed bar code,
an optical element for gathering light reflected from the printed bar code,
a charge coupled device for sensing bar codes from the gathered light, and
a low-power proximity detector; and

wherein, when activated, the bar code reader activates the low-power proximity
detector to first detect a reflective surface within a threshold distance from the optical element
25 prior to activating the illumination elements to read a bar code.

35 The method of claim 24 wherein the bar code reader comprises a laser bar code reader.

30 36. The method of claim 24 wherein the bar code reader comprises a LED bar code reader.

37. The method of claim 24 wherein the input component comprises a CCD bar code reader.

5 38. The method of claim 24 wherein the hand-held device includes a microphone input component for inputting an input request represented by audio tones.

39. The method of claim 24 wherein the hand-held device includes a keypad input component for inputting an input request represented by mechanical manipulation of the
10 keypad.

40. The method of claim 24 wherein the hand-held device includes a visual display output component capable of displaying alphanumeric symbols.

15 41. The method of claim 24 wherein the hand-held device includes a visual display output component capable of displaying both alphanumeric symbols and graphical images.

42. The method of claim 24 wherein the hand-held device includes a printer output component.

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43. The method of claim 24 wherein the hand-held device includes an output component comprising one or more illumination element.

44. The method of claim 24 wherein the hand-held device includes an output component
25 comprising a speaker element.

45. The method of claim 24 wherein the hand-held device includes a serial interface that is an output component.

30 46. The method of claim 24 wherein the hand-held device includes a serial interface that is an input component.